C. Jik



Page 1 of 7

TECH CENTER 1600/2900

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/445,201

DATE: 06/20/2001 TIME: 12:28:18

Input Set : A:\ES.txt

Output Set: N:\CRF3\06202001\I445201.raw

ENTERED

2	<110> APPLICANT: MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WSSENSCHAFTEN E.V.
4	BREIER, Georg
5	RISAU, Werner
6	RONICKE, Volker <120> TITLE OF INVENTION: REGULATORY SEQUENCES CAPABLE OF CONFERRING EXPRESSION OF A
HETEROLO	DNA SEQUENCE IN ENDOTHELIAL CELL IN VIVO AND USES THEREOF
9	
	<130> FILE REFERENCE: VOSS1110
	<140> CURRENT APPLICATION NUMBER: US 09/445,201
	<141> CURRENT FILING DATE: 2000-04-12
	<150> PRIOR APPLICATION NUMBER: PCT/EP98/03318
	<151> PRIOR FILING DATE: 1998-06-03
	<150> PRIOR APPLICATION NUMBER: EP 97108959.4
	<151> PRIOR FILING DATE: 1997-06-03
	<160> NUMBER OF SEQ ID NOS: 22
	<170> SOFTWARE: PatentIn version 3.0
	<210> SEQ ID NO: 1
	<211> LENGTH: 12845
	<212> TYPE: DNA
	<213> ORGANISM: Murine
	<220> FEATURE:
	<221> NAME/KEY: misc_feature
	<222> LOCATION: (1)(12845)
	<223> OTHER INFORMATION: n is any nucleotide
37	<pre><400> SEQUENCE: 1 tctaggatat aggagatagg tttgcgtaga attcagtcct ttgaagacct gataagcttt 60</pre>
38	colligiation against a colligious according to the collins of the
40	aagaaggaag atgggttaca cattgggaaa tggttgcaat ctgcacatgg cagaggcaag 120
42	agatgcaaat cacatttett acatacteca tacaaatett acaagactgt ttttettet 180
44	catttaaaat aagaagacct gccagtcttc cccttattac taattacagt cactctgtat 240
46	ctttgttgac attggatagt tttacatact tcaacaggct ggtgtcatta aagttgtggt 300
48	gggtgggcac cagagacacg tgattcagag tgggaggaga tgcaggagaa acgaggcaca 360
50	gcagaagcag aagcgaggaa aaacactctc aacgttacta acacatcgag aggttccgca 420
52	cactagcaat acgggctgaa tctgacctaa tctctgctgt tgaaaatttt gcctagccgc 480
54	acactagcaa tacgggctga atctgaccta atctctgctg ttgaaaattt tgcctagcct 540
56	gtcacacaag tgctgagcat acagaaaaag gagagtaatt ctctggttct ttgactaacc 600
58	aaatagtcta tatcaaattg cctaagataa tgtatacatt tagtacatga ctggttatac 660
60	ctattctata tgactattat ttaaatgtga atttacaagt gagcatatga agtccatttt 720
62	acatggctag tacatataac ttttaaaaag ttggacatag ttatattttt ccatttattt 780
64	atttacttta tatcctgatc acagaccccc cectectetg gattaactet etceaetget 840
66	tettacecet ecceatetet ectteacete tgagaagggg ggatacetee tgtettatet 900
68	ggtttcagtg ggagaaggat gtatcctaac acatataatt tttaatatcc tgagtttttc 960
70	tttcatacac cttacttatt ctattcattt ttcaggaagg catgtttaat gtttttttt 1020
72	taattttatg tgtacgagtg ttttgcctac acagtcatag tgcatcgcat acatttttgc 1080
74	tgcccgtaga gatcagaagg gagcattggg ttccctagga ctggaggcat gaaccacctt 1140
76	gtgggtgcag agaactgagc ctgggtcatc tcaaagcatc aggttcttct tgagtcatct 1200
78	cacttgccac ttctcccatt tactgatttt atctgtgtgc agacattcat ggcccagtcc 1260
80	acaggtggaa gtcagggaca acctatagga gtcagtcctc tccttctacc gtgtgagtcc 1320
82	ctggcctcaa actcaggttg tcgggcttca tagcaagagc ttctatttgt tgagccatct 1380

PATENT APPLICATION: US/09/445,201 TIME: 12:28:18

DATE: 06/20/2001

Input Set : A:\ES.txt

	84	tgctagcccc	accccatact	atctttataa	tatctgttta	attaagacat	tcataatgaa	1440
	86	ttttattaac	attcatcgtt	atccccttta	ccaattttac	tatgtattaa	ttgccacccc	1500
	88	tttaaattta	attacttcct	tggctgggtt	ttacaggaga	gttccaggaa	gctagatgga	1560
	90	gagatggctc	aacagtttag	agcaacggct	gttcttgcag	aggacctagg	ttcaagtcct	1620
	92	ggcactcaga	ggtggctcac	aatcatctgt	gacttcagtt	ccaggggatc	tgaagaattc	1680
	94	ttctgggctc	catgggcatc	aactacacac	ttggttcata	gacatacatg	ccagcaaatg	1740
	96	attgatccat	acatatgaaa	taaaccataa	acagaaaaaa	aaaaggaagg	tgagggaagg	1800
W>	98	aaaaaaagtt	taaaaaaagg	aaaggaagga	aggaagggan	nnnnnnnnn	nnnnnnnnn	1860
W>	100	nnnnnnnn	nnnnnnnnn	nnntctctc	: catactgaaa	gatgtccaca	atgactaagg	1920
	102	2 gaatttttt	taaaagacaa	ı gcacaacgtt	ttctagggat	. caaactctat	ttgtgaggaa	1980
	104	l gactggtggt	: ttgaagatta	catagcagag	, ttacatctaa	catgagcgtg	tttcccctgg	2040
	106	atggaaggag	, tctgataact	tgtctttctt	: tcttagttag	, catctcagag	tcccccgcct	2100
	108	3 cccttaacat	cctttttgca	caccatctt	: ttaggaaaat	. ggatcattta	tggggatgta	2160
	110) gtgatttgta	a caagaatgto	ccctgtgggd	: tcagatattt	. gaatacttag	ttcccagttg	2220
	112	2 ggggagcttt	tgtagggagg	, ttgggaggca	ı cagcctggca	ı ggaggaagca	tgctagcagc	2280
	114	1 tttgagacta	taaaccctca	tctactacct	tgttctcttt	ctgcattgtg:	ctgtgtctga	2340
	116	cactgtgaga	ttcctgctcc	cgatgccate	cctgcccgcc	: atgatagact	cctagccctc	2400
	118	3 tggaaaggta	a acctcagtga	actctcttct	: ataagtttct	: ttgctcctgg	tgttttatca	2460
	120) ctgaaacgga	a aaagcttgca	ı gggaggtagg	g aggcagcctg	, tggcgttgat	tcaatgcacc	2520
	122	2 tggccttato	ctcggatgag	g atcggtcacc	agtcaaaaac	: tgtgagcttg	aaggtcttgg	2580
	124	1 gtgcttaaca	a tctattttta	caaatcttat	ttagcaactt	: agaactgtga	aatattggaa	2640
	126	agctacttaa	a accttctaaa	ctccctcctc	c cacactatga	ı gaatgttaca	ttttctattc	2700
	128	3 agttatttt	gagcagtaaa	n cagatgaato	c aaggaatatg	, cccatcacat	: caagagtgct	2760
	130) cctaaatgga	a cttgcttgtt	attcatttac	c agtgtggccc	cttgactttc	atcggcactc	2820
	132	2 ctagcagaaa	a acaaaatccg	g ccagatggag	, ctggagagat	ggctcagctg	, ttaagaatac	2880
	134	4 ttatccctad	c acaggeeetg	g gagccagtto	ccagcaccca	ı cacggtggct	cacaaccatc	2940
	130	6 tgtaactcca	a gttctaggag	g accegaeted	c ctcttctgtc	tgaaaacacc	aggcacgcgt	3000
	138	3 gcggtctaca	a tacaaacato	g aaagcaaaat	acacacatta	ı cataaataaa	tcttaaaaaa	3060
	140) tgattcgggg	g tgggggaagg	g aaaaaaaagg	g atgttagaaa	ı atcgatgtaa	ctgttttttc	3120
	142	2 cttttgcaca	a gatctaagtt	agggaaggag	g aacattctct	taccatcgaa	ı aataattgtt	3180
	14	4 ttcattgcco	c ccaagtctgo	c taatagagct	tgctacctto	c atggctgtcg	, taaggatgag	3240
	14	6 gcaaagatg	g acttcagctt	t tcagactgtg	g tctgctcaaa	ı tgttggctac	tcctgttttc	3300
	148	B tgaccccctt	ctctggtgca	a atgtggactt	tcaattaatt	tecetgeate	ttttacatat	3360
	150) ttgatttaaa	a aaatatttta	a ttttatgtaa	a ttgtatgtat	. atgcatgtca	ataagcatat	3420
	152	2 gtgtgtgtgt	t ttccatggaa	a accaaggcaa	a cagattttco	c agagetgtag	g aaatgggctg	3480
	154	4 tgagacgcc	c actgtgggtg	g ttcggaacca	a aactcgggto	ctgtggaaag	g acagcgagca	3540
	15	6 cccataatgo	c agaggtatct	ctcagattt	: actttaaaat	ttcaattttc	tttttttt	3600
	15	8 ttaaagttc	c aagtaactat	. aggaaagtad	c atgggtatat	agatececa ₉	, taccaagatt	3660
	160	cttcctttg	c aggtagcaca	a acttggtttg	, tttcacataa	ı agaatggaaa	a gtcattaaaa	3720
	162	2 cactcatcac	c actgtaaagt	t agaattgaad	c tctgacagaa	ı caagcgaagt	gagtetgaet	3780
	164	4 tccaggtaad	c tgagccttct	tttcctccta	a aagacacaag	g ccatacacag	g agtaaaataa	3840
	16	6 acttgggca1	t ggtgagaagg	g aaacaacgca	a ggagggctag	g ccaagtctga	a gagtcgtgag	3900
	168	8 tgtgctcgg1	t ttataaacg	g agcccacctt	gccagcgagg	g tagtcacate	g ctctgctaaa	3960
	170) cagaaactta	a agaaaacact	tacacgaago	c aaacatgggg	g aagtgccate	g caagcatgtg	4020
	17:	2 actgactgg1	t ggcaatgaco	c gaaaccacaq	g cagccactag	g aaaaggaagg	g gtagtgcgcc	4080
	17	4 acactgtagt	t tgtgaaaatg	g aacttattca	a tttattttga	a aaaacgtgta	agaagcaaag	4140
	17	6 atgtcttct	t teccaectae	c ctttgcggca	a ggcgagcact	tcctggaatt	tataaagtgc	4200
	178	B gatctttctq	g gggacttctd	c ataacattto	c ctactgctca	a tctatgtctq	g tgtcaaatag	4260
	18	O agaatgctc1	t tgaacaagt	g tgtgtgtgt	g tgtgtgtgc	g cgcgcacgcg	g cactcactcc	4320

DATE: 06/20/2001 TIME: 12:28:18 PATENT APPLICATION: US/09/445,201

Input Set : A:\ES.txt

					atatttgagt		4380
					aggtcactag		4440
					ccttccccag		4500
					ggaagctcaa		4560
					tctccttccc		4620
					aaaaaaaaa		4680
					ataggaggct		4740
					catcgtttcc		4800
					gtattagagg		4860
200	ttcttaagta	aaacatagaa	ggggaagtgt	ccagaattgt	aaataaggct	tcgagagaag	4920
202	ccttgtctgg	ccaccgggat	ggagaagacc	taccttcgcc	tatccaggat	ccatcgtccc	4980
204	tccctctacc	cagatctgac	agccctcctt	ggctcttttg	ctgaggtttg	tttgagtttg	5040
206	ttttactctc	tgcaagagaa	gtttccttaa	acattctacc	ctgttcacaa	gtaaatacac	5100
					aaaaagaaca		5160
210	ttcagaacgc	tgtcgatagg	tacaccaagc	agccttcata	cggagttttc	attcgtgagg	5220
					atgcctctgc		5280
					tattatatag		5340
					ctcctggttt		5400
					catgcctgtt		5460
					gcatatcagt		5520
					aaagactgtc		5580
					gtcacaagat		5640
					ggggtgaagg		5700
					ggggggactg		5760
					aaaactctcc		5820
					ggcctggcca		5880
					tagcagccac		5940
					caccgccagc		6000
					tcacaaccga		6060
					atggacgaga		6120
					acattcagac		6180
					ctgaccaact		6240
244	ttatacccca	agtacatcta	gattcagaga	ttcttatctt	catgctccca	actacaaaca	6300
248	gatttttggt	cccttgggac	tttcagtgga	acaacaaaaa	gagttctgca	cttgcaggct	6360
					ttcccaggtt		6420
					caccagaaac		6480
					tccggggtag		6540
254	gagatagaaa	accagacyc	gactigetge	tatocagton	ggggcgtggc	cadacacada	6600
					ctagtgtgta		6660
					tgtgtttcct		6720
							6780
					cgcagccggg		6840
					ccagggcgcc		6900
					tgtgacttct		6960
					gcccagcgcg		7020
					cgtggagacc		7020
					agtagggtgc		7140
					cctcctccct		7200
					cgaaatgact		7260
2/8	tctactctcc	cccgggcatc	ggttggagcg	rarectacaa	agccgtcaca	geeeetggeg	1200

DATE: 06/20/2001 PATENT APPLICATION: US/09/445,201 TIME: 12:28:18

Input Set : A:\ES.txt

				agccggggca			7320
				tcaagccaag			7380
				ggggcaggga			7440
				ctatgtgagg			7500
				agaatgctat			7560
				aggtgtatta			7620
				actctgaaag			7680
				ttaaaatgcc			7740
				tttcccttcc			7800
				cttccctttc			7860
				ttttgaagcc			7920
				aaaaagaagt			7980
				agcattggca			8040
306	cgcctgtcta	gagctattga	gttttcctca	taatgacttg	gttcatcagg	ctagctccac	8100
308	cacgagtgcc	ctcttgttcc	tgagaaggcc	gcactctccc	cctttctggg	aagagaaaga	8160
310	cagcctggaa	catgtgcttg	ccctgggttc	catagagaag	caagttgctt	taaagcccag	8220
312	agaattccta	gtgtagcagc	ttaacagcgt	cccgttctct	gaataagatg	gaggttgccc	8280
				tgggctataa			8340
				tctttgagcg			8400
				ataaaagggc			8460
				aaagaacaga			8520
322	atgaatgagg	tttaataaag	gcgatggatg	agcattagtc	actgatgtaa	atctccagtt	8580
				cagacatgta			8640
				taagagaatc			8700
				gcgtgtagat			8760
				aaggccattt			8820
332	gcagtttgtg	acgagttact	actacatttt	cctcacacat	ctgcctgact	aatgagttca	8880
334	tcagatgagc	gtatccagtg	attqtttqca	ggttaatggt	tctcagtcat	gtttagaatc	8940
336	tacttatcaa	acaaattgtt	ttctcatttc	ctgcttcttc	tcaaacaaag	taagattcca	9000
338	ttattgaaag	gcttgtttaa	gagcatttta	actgcttgcc	tatqttaqqq	acagtgactt	9060
				attgaatatg			9120
				cagtcacttt			9180
				aaagtttaga			9240
346	ctttaacaat	gccaactagc	ttctgagatt	cattaatgtc	atttaattac	caatgtttta	9300
				ttgtaacagc			9360
				agactattgc			9420
				aggccacagt			9480
				tggcctcatc			9540
				ttaggagtca			9600
358	attagaaagc	ctggatgcct	gcctgctatt	aattagttat	tcttctcttc	tgagacagag	9660
				cttgcggtcc			9720
				aggtagctcg			9780
				atgttacagg			9840
				tgtatctctc			9900
				cagcttggta			9960
				gctcattaga			10020
				tgaacttggg			10080
				tagaagccac			10140
376	agataccasa	ggaagtctgg	tacacagcat	gataaaagac	aatgggacgg	ggtcacagtg	10200
5,0	agacaccada	- June July	cacacageae	Jacanaagac		,,	

PATENT APPLICATION: US/09/445,201

DATE: 06/20/2001 TIME: 12:28:18

Input Set : A:\ES.txt

```
378 gctcccgtcc ctttcagggg tatggagacg agctgtagag agatgtctcc agggagtttt 10260
380 cattaatcag caatttagtc agatctgtgc atcctatgct ttacaagaaa tgtcagtggg
                                                                     10320
382 cctgagatca tcagatggag gttcatcggg tttcaatgtc ccgtatcctt ttgtaagacc
                                                                     10380
384 ttgaagttgg caacgcagga aaacaggaac tccaccctgg tgccgtgaat tgcagagctg 10440
386 ttgtgttggt ttgtgaccat ctgcccattc ttcctgttat gacagagctt gtgaacttta 10500
388 actgggactg gggcaaagtc aatcccacct ttatacaatg aattgctgaa gaggcctttt 10560
390 aaaacttgga gtgtgcattg tttatggaag ggctttccta ttggatccaa ctcttttcta 10620
392 atttgtttct aggtttgcct ggcgattttc tccatccccc caagctcagc acacagaaag 10680
394 acatactgac aattttggca aatacaaccc ttcagattac ttgcaggtaa ggattccttt
                                                                     10740
396 ttgagccagc tttcctatgt gaaaggactc attgtttact gaggtcacaa caatttccac
                                                                     10800
398 tattgcagaa gtataatagt attgttacaa ttgtttataa atcatgagac ttctaagaac
                                                                     10860
400 ctatttaata atgaaacaat ggaaaaagtc ttttcaaacc tttgtactct tttgctgagc 10920
402 cgttttcaac atgcacaaac atattacaca aatataacat acacaggaac acacatgaat 10980
404 gcatgggatg atgtgcctaa aactagcatg taattgatat tcacaattat tgataaatta 11040
406 gtaaagcaaa ggaatteett atgaatagag etaaaattet ateeatgtte aagteaceea 11100
408 gaatggette tggacatttt tttttttage tgttttetae aagtgaaatt etgeetgtat 11160
410 tagcaattta atatctagcc aataatattc ctgaccatat gtcctgttca gaccatgacc
                                                                     11220
412 ttcataatct ggcttgatgt tctgggcttc tttccctctt gccagcaaga tgtcacggtg
                                                                     11280
414 ttgatgctgg ataaactgag aaacagaagt ttttcgcaag aagaggacct tgaattttgc
                                                                     11340
416 ttttcccctg agagacaaga aaggaaactt agaggaggtg tagctgggag tgtggtcatt 11400
418 catgaaagac ctgtttgcag ggcagtgtgt tttgctgggg acagtaatga gcctagatcg 11460
420 tagtgccatc ccaagagagt gcttggtggc aaaaagagcc ctagcagctt gtggcagttg 11520
422 cctcatattt gaagaatact aagaggteec eegaataact eagggetagt gttgateatt 11580
424 gcatgtggag agaatccaag cetectatet agggtetaca aaagtaacca atgeecagte 11640
426 tttgggggaa agcaaaacca gaaagcgatg atagcaggac ctgtttattt tcattaagtc
                                                                     11700
428 atggcattte cagagaettt geteeceeta tteteagaea caaageecae ttaagatete
                                                                     11760
430 cctctggaga ctgctgggaa catttcttaa gttctgaaaa aaccctggag tgattgggca 11820
432 cagacgatcc tgtcacttca tgtgagtgct aagctctttg ggtgatgact cagtgggtca 11880
436 gtctgtttgg tgtggccctc acaaggcact gtgagcttct tctctctgtg tgctaacttc 12000
438 ttactctccc ttgcttatac ccacataggg actctggctt tgttgctgtt cttcaatgct 12060
                                                                     12120
440 tcagatgtgc cctgggtcct gtctgtcctt cacacttact gatgctgcct ggaatgctat
442 tecteceaat gtgcataggg ceageteggt ceaaateete tetttettt geetettta 12180
444 tattttcctt cacagtatca aatcaccaca gtttatgcaa caaactgaaa ctttaaaatt 12240
446 gtctgtctcc ttatattagt gataggttcc agaaaggcac tgatttttt tcttccctgg 12300
448 tgtacactgg gcaactactc taccactgag cgtgatatcc ttggtccctt aaaagttatc 12360
450 ctctgtcctt aataatgctt agcaatcata tttgcttaaa atatttattg aatgactgca 12420
452 ggaatgaatg aatgaatgag ctaacagaaa actcatgacc atgtgggtga tttccgaaac 12480
454 agagtgtgag atctttggtg gcatgtcctt gtagactgtc tgccaccagt atctatcatc 12540
456 ttgaaggtga ctattgagta gtttatatgc atgtgaaaaa ccaaaccttc tattctctta 12600
458 ctcatagect ctcttaatca tagecetgtg geatggagtg taccattgat atctteetgg 12660
460 aatacttttt caggggacag cgggacctgg actggctttg gcccaatgct cagcgtgatt
                                                                     12720
462 ctgaggaaag ggtattggtg actgaatgcg gcggtggtga cagtatcttc tgcaaaacac 12780
464 tcaccattcc cagggtggtt ggaaatgata ctggagccta caagtgctcg taccgggacg 12840
                                                                     12845
466 tcgac
469 <210> SEQ ID NO: 2
470 <211> LENGTH: 31
471 <212> TYPE: DNA
472 <213> ORGANISM: Artificial sequence
```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/445,201

DATE: 06/20/2001

TIME: 12:28:19

Input Set : A:\ES.txt

Output Set: N:\CRF3\06202001\1445201.raw

L:98 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 L:100 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1